IN THE CLAIMS

1. (Currently Amended) A method performed by a node of a wavelength multiplex optical network, the method comprising:

detecting at a node that at least a portion of a first unidirectional path of an optical circuit is down, the first unidirectional path being originated from a first terminating node for reaching a second terminating node as a destination of the first unidirectional path; and

signaling the first terminating node by removing at least a portion of light of a second unidirectional path in an opposite direction of the first unidirectional path of the optical circuit, to indicate a path between the node and the first terminating node is down, wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path.

2. (Original) The method of claim 1, wherein the first terminating node is notified of the detection by not receiving at least a portion of the light of the second unidirectional path.

3. (Original) The method of claim 1, wherein the first unidirectional path is detected based on a loss of at least a portion of light of the first unidirectional path.

4. (Original) The method of claim 1, further comprising:

detecting a wavelength of the first unidirectional path (first path/wavelength) is down; and

signaling the first terminating node via a second path/wavelength of the second unidirectional path with respect to the status of the first path/wavelength.

5. (Original) The method of claim 4, wherein the first path/wavelength is detected based on a loss of light of the first path/wavelength, and wherein the first terminating node is notified by not receiving the light of the second path/wavelength.

6. (Original) The method of claim 1, further comprising:

determining whether the node is a terminating node of the optical circuit with respect to the first unidirectional path,

wherein the signaling is performed only if the node is a terminating node of the optical circuit.

7. (Original) The method of claim 1, wherein the first and second unidirectional paths are within different fibers.

8. (Previously Presented) The method of claim 1, wherein the signaling is performed without converting optical signals of the first unidirectional path to electrical signals specifically used to signal the first terminating node that the path between the node and the first terminating node is down.

9. (Currently Amended) An apparatus, comprising:

a node to be coupled to a wavelength division multiplex optical network, the node including,

a detection module to detect that at least a portion of a first unidirectional path of an optical circuit is down, the first unidirectional path being originated from a first terminating node for reaching a second terminating node as a destination of the first unidirectional path, and

a control module coupled to the detection module to signal the first terminating node by removing at least a portion of light of a second unidirectional path in an opposite direction of the first unidirectional path of the optical circuit, to indicate that a path between the node and the first terminating node is down, wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path.

10. (Original) The apparatus of claim 9, wherein the first terminating node is notified of the detection by not receiving at least a portion of light of the second unidirectional path.

11. (Original) The apparatus of claim 9, wherein the first unidirectional path is detected based on a loss of at least a portion of light of the first unidirectional path.

12. (Original) The apparatus of claim 9, wherein the detection module detects a wavelength of the first unidirectional path (first path/wavelength) is down, and wherein the control module signals the first terminating node via a second wavelength of the second unidirectional path (second path/wavelength) with respect to the status of the first path/wavelength.

13. (Original) The apparatus of claim 12, wherein the first path/wavelength is detected based on a loss of light of the first path/wavelength, and wherein the first terminating node is notified by not receiving the light of the second path/wavelength.

14. (Original) The apparatus of claim 9, wherein the control module further determines whether the node is a terminating node of the first unidirectional path of the optical circuit, and wherein the control module signals the first terminating node only if the node is a terminating node of the optical circuit.

15. (Original) The apparatus of claim 14, wherein the first and second unidirectional paths are within different fibers.

16. (Previously Presented) The apparatus of claim 9, wherein the detection module signals the first terminating node without converting the respective optical signals of the first unidirectional path to electrical signals specifically used to signal the first terminating node that the path between the node and the first terminating node is down.

17. (Currently Amended) A wavelength multiplex optical network, comprising:

a plurality of nodes interconnected via one or more links, each of the plurality of nodes to

detect ~~node~~ that at least a portion of a first unidirectional path of an optical circuit is down, the first unidirectional path being originated from a first terminating node for reaching a second terminating node as a destination of the first unidirectional path, and

signal the first terminating node by removing at least a portion of light of a second unidirectional path in an opposite direction of the first

unidirectional path of the optical circuit, to indicate a path between the respective node and the first terminating node is down if the respective node is a terminating node of the optical circuit, wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path.

18. (Original) The network of claim 17, wherein the first terminating node is notified of the detection by not receiving at least a portion of the light of the second unidirectional path.

19. (Original) The network of claim 17, wherein the first unidirectional path is detected based on a loss of at least a portion of light of the first unidirectional path.

20. (Original) The network of claim 17, wherein the node further

detects a wavelength of the first unidirectional path (first path/wavelength) is down, and

signals the first terminating node via a second path/wavelength of the second unidirectional path with respect to the status of the first path/wavelength.

21. (Original) The network of claim 20, wherein the first path/wavelength is detected based on a loss of light of the first path/wavelength, and wherein the first terminating node is notified by not receiving the light of the second path/wavelength.

22. (Canceled)

23. (Currently Amended) The network of claim ~~22~~17, wherein the first and second unidirectional paths are within different fibers.

24. (Previously Presented) The network of claim 17, wherein the signaling is performed without converting optical signals of the first unidirectional path to electrical signals specifically used to signal the first terminating node that the path between the node and the first terminating node is down.

25. (Currently Amended) A method performed by a node of a wavelength multiplex optical network, the method comprising:

detecting at a node that at least a portion of functionality of a wavelength of a first unidirectional path (first path/wavelength) of an optical circuit fails to operate, the first unidirectional path being originated from a first terminating node as a source node for reaching a second terminating node as a destination node of the first unidirectional path, the first terminating node and the second terminating node forming the optical circuit; ~~and~~

determining within the node whether the node is a terminating node of the optical circuit in response to detecting a failure of the first unidirectional path;

if it is determined that the node is a terminating node of the optical circuit, the node signaling the first terminating node by removing ~~the~~ a light of a second wavelength of a second unidirectional path (second path/wavelength) in an opposite direction of the first unidirectional path of the optical circuit, to indicate the failure of the first path/wavelength, wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first

unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path; and

the node ignoring the failure of the first unidirectional path without removing the light of the second wavelength of the second unidirectional path if it is determined that the node is not a terminating node of the optical circuit.

26. (Currently Amended) An apparatus, comprising:

a node to be coupled to a wavelength division multiplex optical network, the node including,

a detection module to detect that a wavelength of a first unidirectional path (first path/wavelength) of an optical circuit fails to perform, the first unidirectional path being originated from a first terminating node as a source node for reaching a second terminating node as a destination node of the first unidirectional path, the first terminating node and the second terminating node forming the optical circuit, and

a control module coupled to the detection module to determine whether the node is a terminating node in response to detecting a failure of the first unidirectional path, and if it is determined that the node is a terminating node, the control module is configured to signal the first terminating node by removing a light of a second wavelength of a second unidirectional path (second path/wavelength) in an opposite direction of the first unidirectional path of the optical circuit, to indicate the first path/wavelength is down, wherein the control module is configured to ignore failure of the first unidirectional path without removing the light of the second wavelength of the second unidirectional path if it is determined that the node is not a terminating node, and

wherein in response to lost of the at least a portion of light, which is used as an indication of lost of signal (LOS), the first terminating node is configured to provision another path to reach the second terminating node as the same destination of the first unidirectional path, bypassing at least one node between the first terminating node and the second terminating node of the first unidirectional path.